

CLAIMS

1. A process for the operation of a wind energy installation, in which a rotor of the wind energy installation is decelerated and blocked in a desired rotational position with regard to rotations on the rotor axis, characterized by the fact that the rotational position of the rotor with regard to the rotor axis is recorded when it reaches the desired rotational position, the rotor is stopped in the desired rotational position, and, preferably, locking is initiated automatically when the desired rotational position has been reached.
2. A process according to Claim 1, characterized by the fact that the rotational position of the rotor is determined by use of a marker and a position sensor.
3. A process according to Claim 1 or 2, characterized by the fact that for locking a locking element that is non-rotatably connected to the rotor engages with a second locking element that is fixed with respect to rotation on the rotor axis.
4. A process according to Claim 3, characterized by the fact that the locking element comprises a disk that is, preferably, arranged concentrically to the rotor axis and that is provided with at least one recess, and that for locking the second locking element in the form of a locking pin arranged approximately parallel to the rotor axis is inserted into the recess, preferably hydraulically, with the locking pin preferably braced against part of the frame structure of the wind energy installation.
5. A process according to one of the preceding claims, characterized by the fact that the rotor is decelerated, preferably mechanically, and the brake is released as soon as the second locking element engages with the locking element that is non-rotatably connected with the rotor.
6. A process according to one of the claims 3 to 5, characterized by the fact that the position of the locking element and/or the second locking element is recorded and that the locking process and/or the rotor braking process is controlled depending on the position that has been recorded.

7. Wind energy installation for the execution of a process according to one of the preceding claims, with a rotor that is rotatable with regard to a rotor axis and a locking device to be used for the locking of the rotor in a desired position with regard to the rotor axis, characterized by the fact that the locking device for the automatic locking of the rotor can be operated when the desired rotational position has been reached.
8. Wind energy installation according to Claim 7, characterized by the fact that the locking device is accompanied by a monitoring device that determines whether the desired position has been reached and that produces a signal to so indicate, and that the locking device can be operated in response to the signal so as to automatically lock the rotor.
9. Wind energy installation according to Claim 8, characterized by the fact that the monitoring device possesses a position sensor and/or a marker that is non-rotatably connected to the rotor.
10. Wind energy installation according to one of the Claims 7 to 9, characterized by the fact that the locking device comprises a locking element that is connected non-rotatably to the rotor as well as a locking element that is fixed with regard to rotation on the rotor axis, and that the locking elements are designed to engage with one another.
11. Wind energy installation according to Claim 10, characterized by the fact that the locking element comprises a disk that is set coaxially to the rotor axis and that is provided with at least one recess, and that the second locking element comprises a pin that can be engaged in the recess of the disk.
12. Wind energy installation according to Claim 11, characterized by the fact that the pin can be moved within an inserting device, which preferably is arranged in parallel to the rotor axis, from a release position to a locking position, in which it fits into the recess in the disk.
13. Wind energy installation according to Claim 12, characterized by the fact that the cross section of the pin tapers, preferably conically, in a section plane at right angle to the pin axis along a final segment that in the release position faces the locking element.

14. Wind energy installation according to one of the Claims 11 to 13, characterized by the fact that the pin may be moved hydraulically.
15. Wind energy installation according to one of the Claims 10 to 14, characterized by the fact that the locking device is accompanied by at least one position monitoring device that may be used to record the position of at least one locking element.
16. Wind energy installation according to one of Claims 7 to 15, characterized by a control device by which the locking process can be controlled depending on the rotational position of the rotor that has been recorded by the monitoring device or depending on the position of the locking element as recorded by the position monitoring device.
17. Wind energy installation according to one of the Claims 7 to 16, characterized by a brake arrangement for decelerating the rotation of the rotor.
18. Wind energy installation according to Claim 17, characterized by the fact that the brake arrangement can be controlled by means of the control device depending on the position of the locking element as recorded by the position monitoring device.
19. Wind energy installation according to one of the Claims 16 to 18, characterized by the fact that the control device for operation of the brake arrangement and/or the locking device may be operated in response to commands that may be transmitted by wireless signals.
20. Locking device for a wind energy installation according to one of the Claims 7 to 19.